Airline Trading Partner Tree

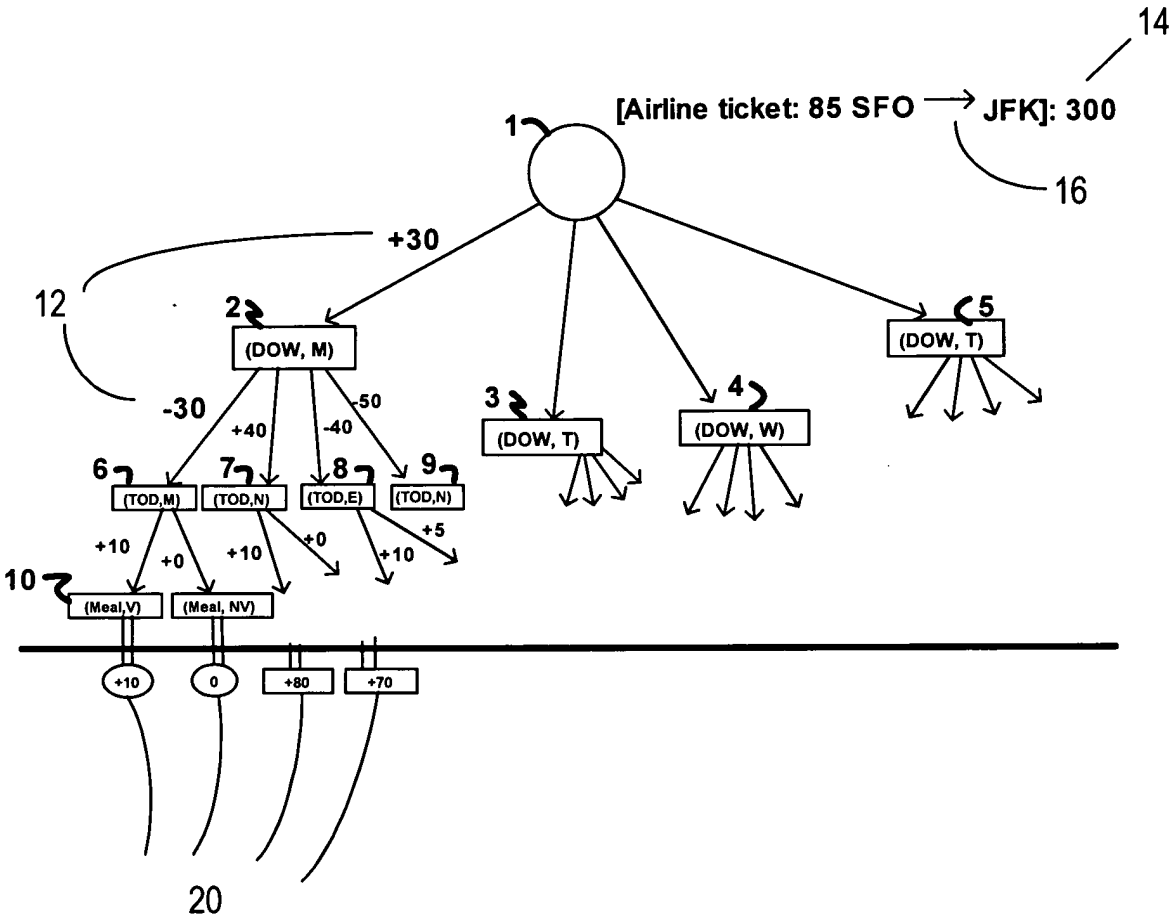
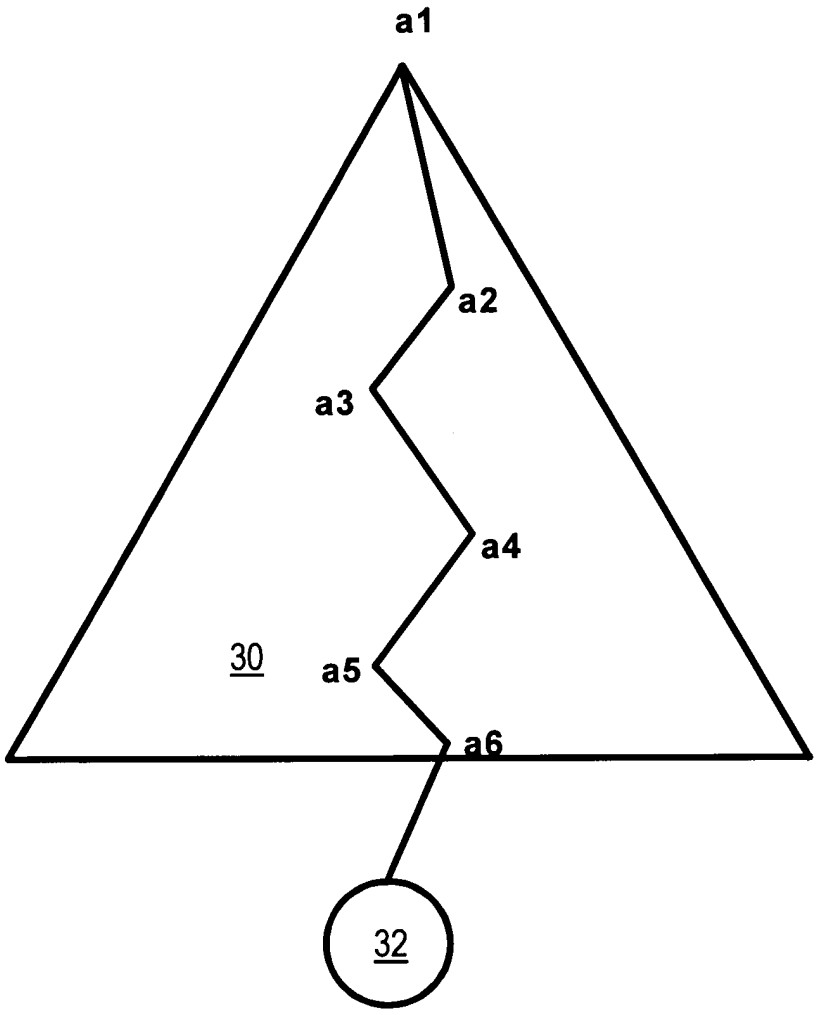


Figure 1



S - Product Value

PRODUCT <a1, a2, a3, ... a6>

Figure 2

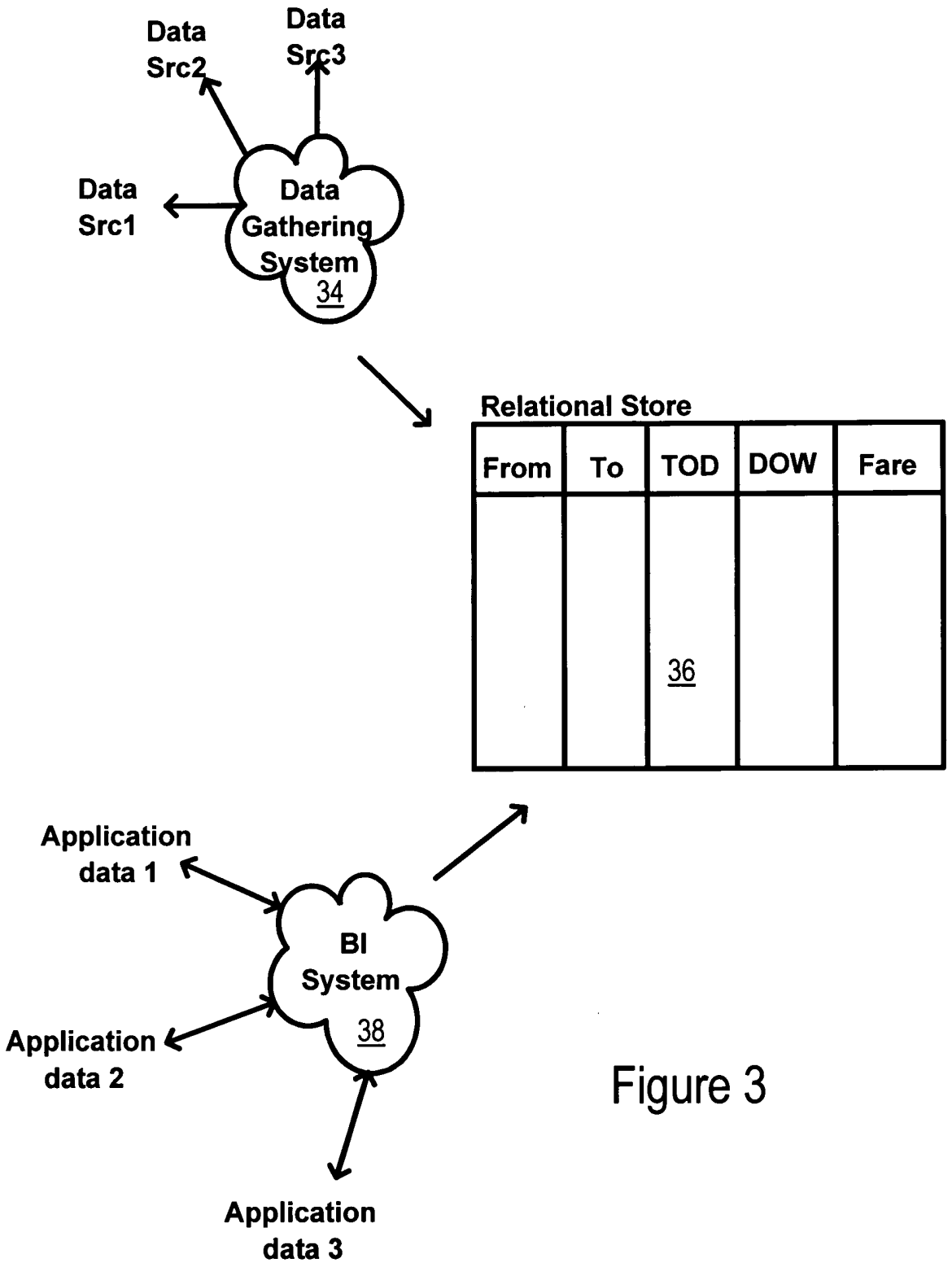

Data Src2
Data Src3
Data Src1
Data Gathering System
34
Relational Store
From
To
TOD
DOW
Fare
36
Application data 1
BI System
38
Application data 2
Application data 3

Figure 3

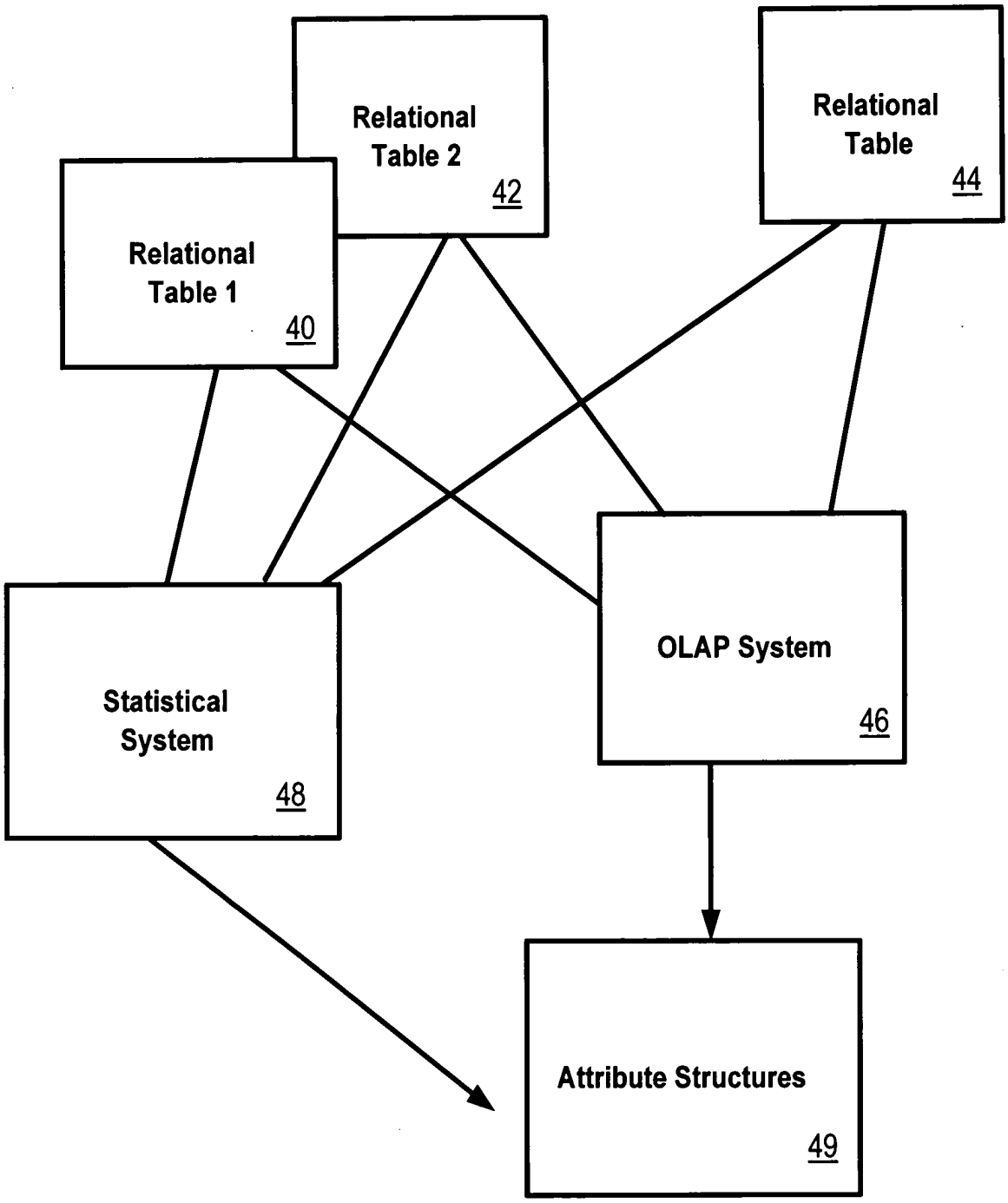

Relational Table 2
42
Relational Table
44
Relational Table 1
40
OLAP System
46
Statistical System
48
Attribute Structures
49

Figure 4

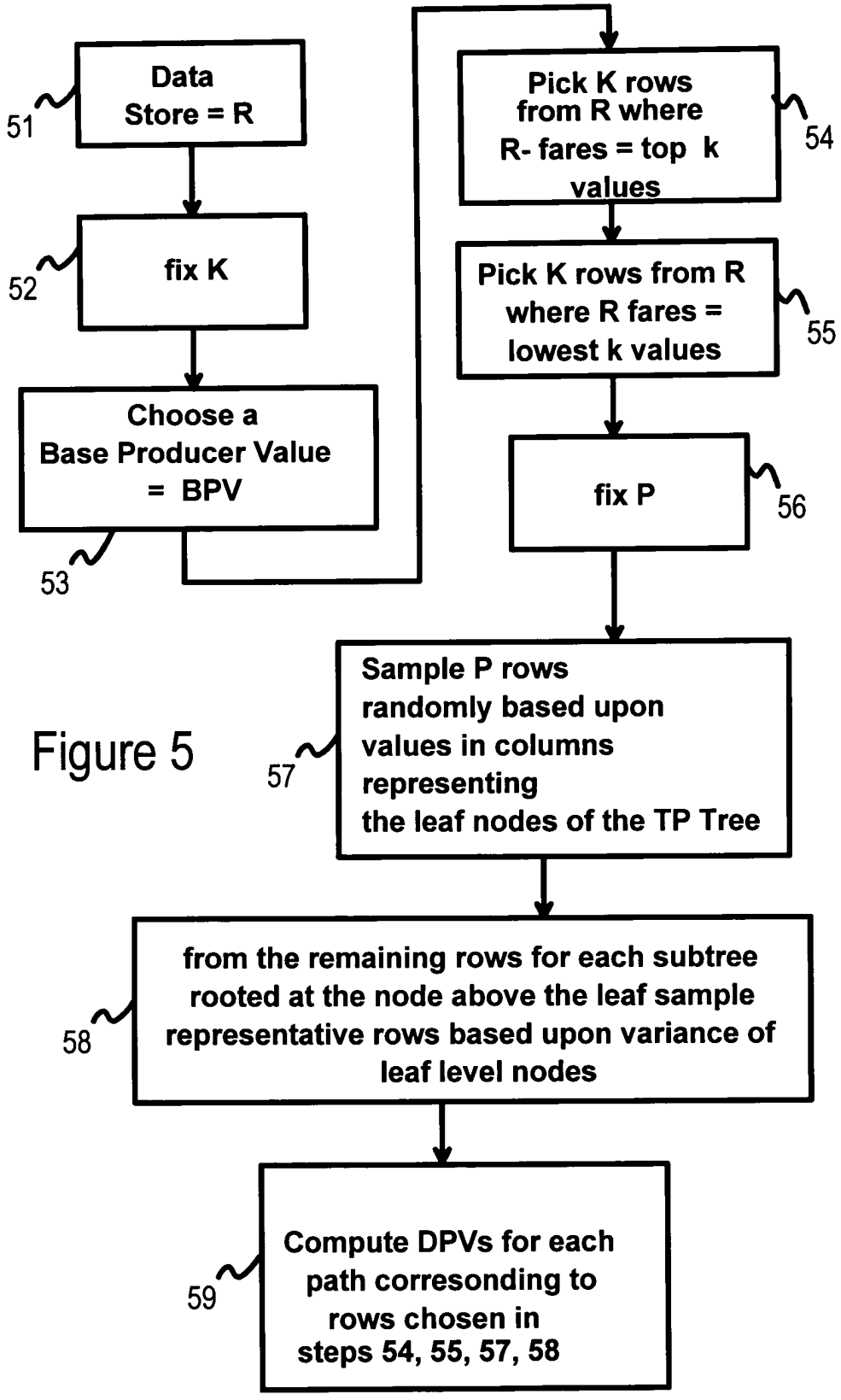

Data Store = R
51
fix K
52
Choose a Base Producer Value = BPV
53
Pick K rows from R where R- fares = top k values
54
Pick K rows from R where R fares = lowest k values
55
fix P
56
Sample P rows randomly based upon values in columns representing the leaf nodes of the TP Tree
57
from the remaining rows for each subtree rooted at the node above the leaf sample representative rows based upon variance of leaf level nodes
58
Compute DPVs for each path corresonding to rows chosen in steps 54, 55, 57, 58
59

Figure 5

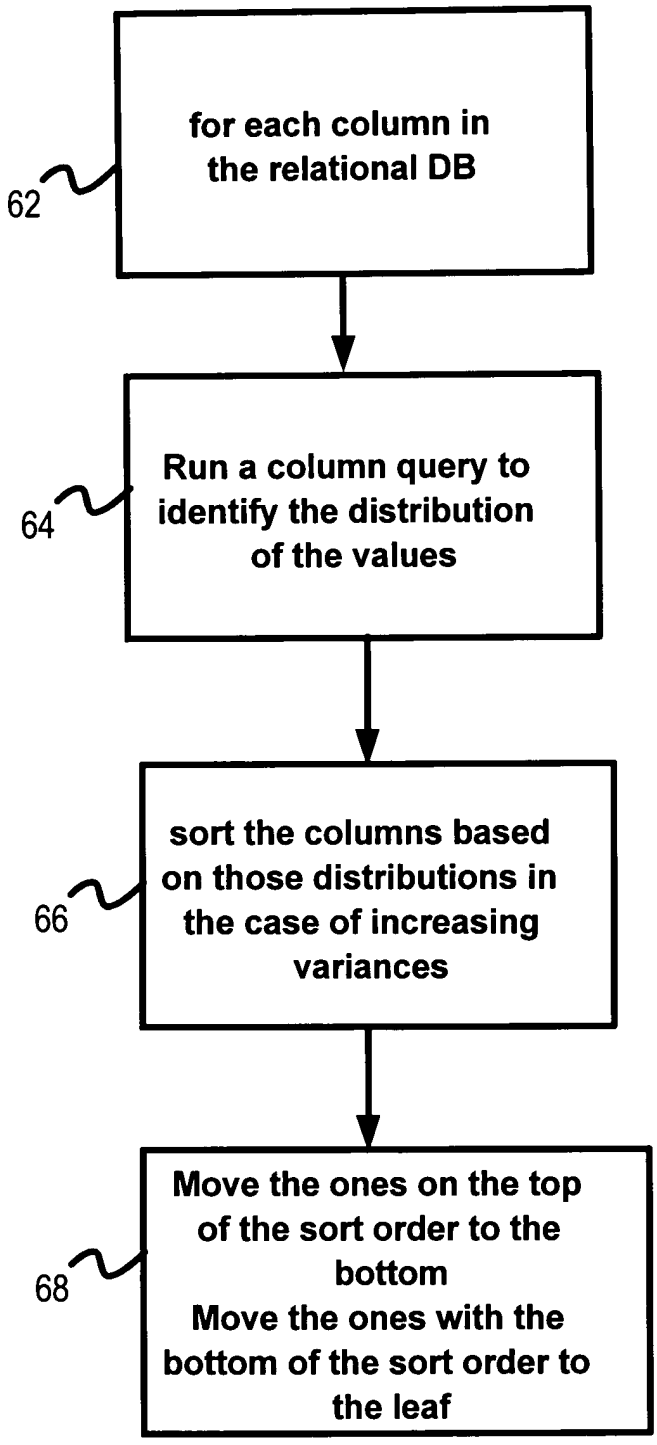

for each column in the relational DB
62
Run a column query to identify the distribution of the values
64
sort the columns based on those distributions in the case of increasing variances
66
Move the ones on the top of the sort order to the bottom
Move the ones with the bottom of the sort order to the leaf
68

Figure 6

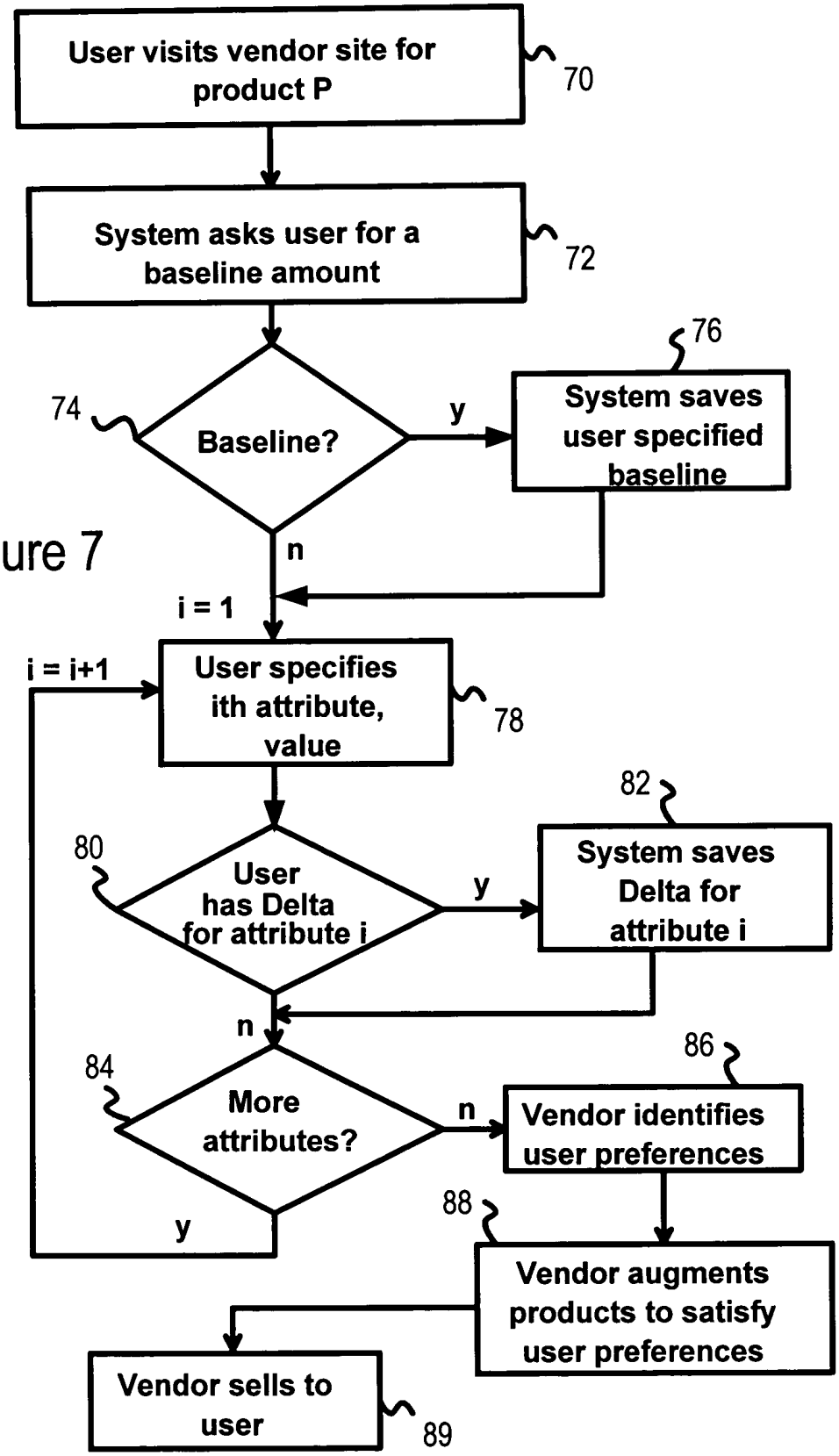

User visits vendor site for product P
70
System asks user for a baseline amount
72
76
74
Baseline?
y
System saves user specified baseline
n
i = 1
i = i+1
User specifies ith attribute, value
78
82
80
User has Delta for attribute i
y
System saves Delta for attribute i
n
86
84
More attributes?
n
Vendor identifies user preferences
88
y
Vendor augments products to satisfy user preferences
Vendor sells to user
89

Figure 7

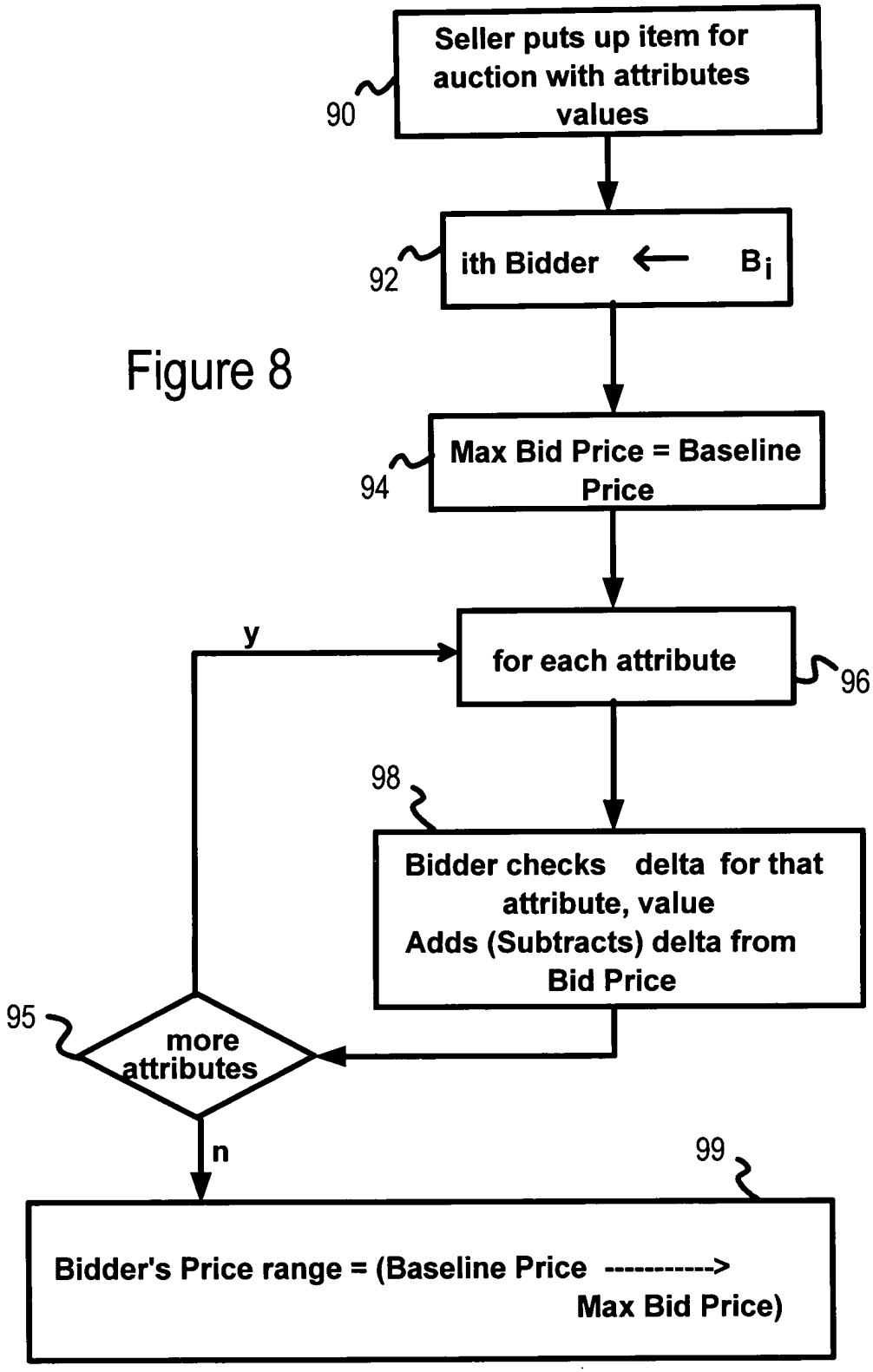

Seller puts up item for auction with attributes values
90
ith Bidder ← B_i
92
Max Bid Price = Baseline Price
94
for each attribute
96
y
98
Bidder checks delta for that attribute, value
Adds (Subtracts) delta from Bid Price
95
more attributes
n
99
Bidder's Price range = (Baseline Price ----------> Max Bid Price)

Figure 8

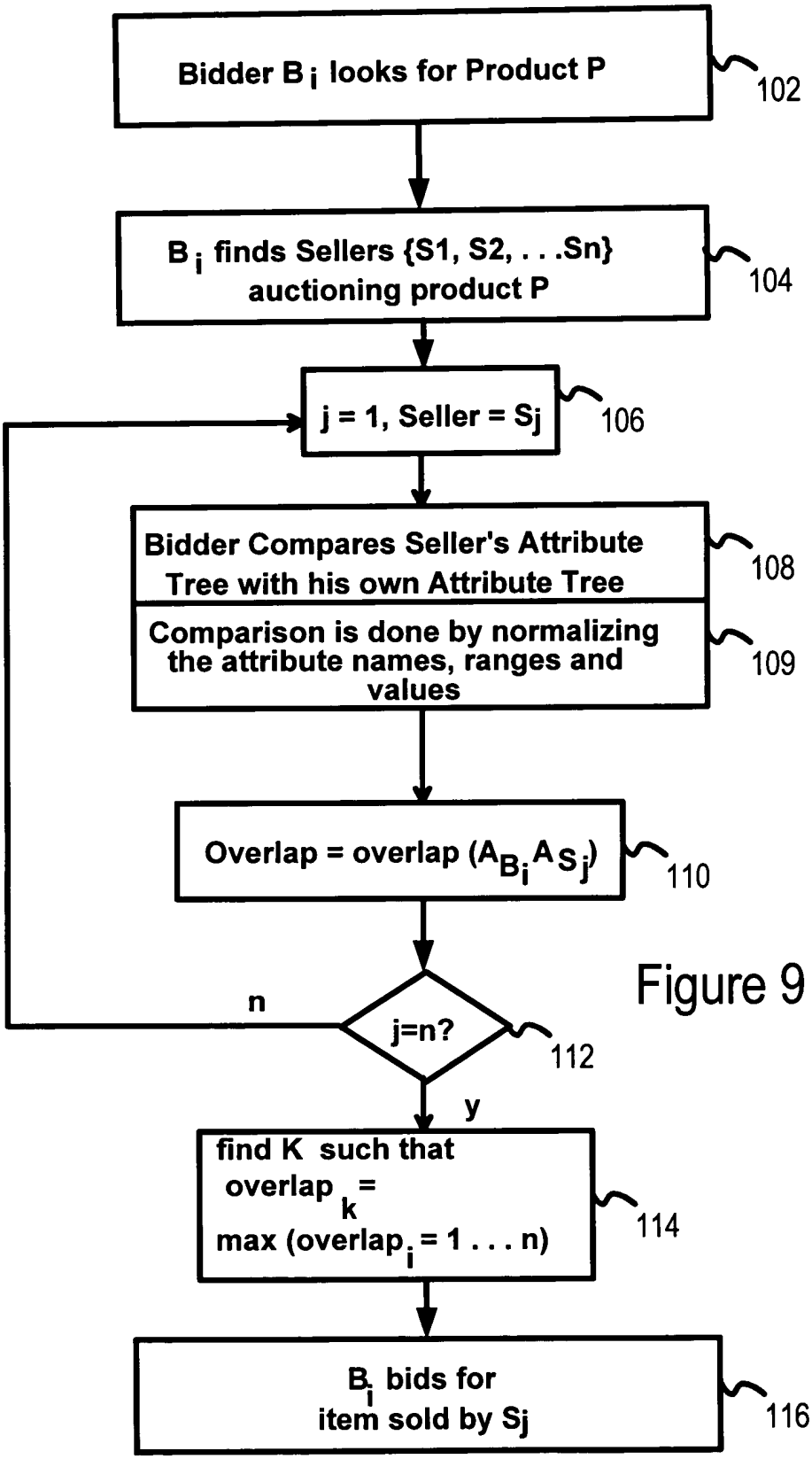

Bidder B_i looks for Product P
102
B_i finds Sellers {S1, S2, . . .Sn} auctioning product P
104
j = 1, Seller = S_j
106
Bidder Compares Seller's Attribute Tree with his own Attribute Tree
108
Comparison is done by normalizing the attribute names, ranges and values
109
Overlap = overlap ($A_{B_i} A_{S_j}$)
110
n
j=n?
112
y
find K such that overlap$_k$ = max (overlap$_i$ = 1 . . . n)
114
B_i bids for item sold by S_j
116

Figure 9

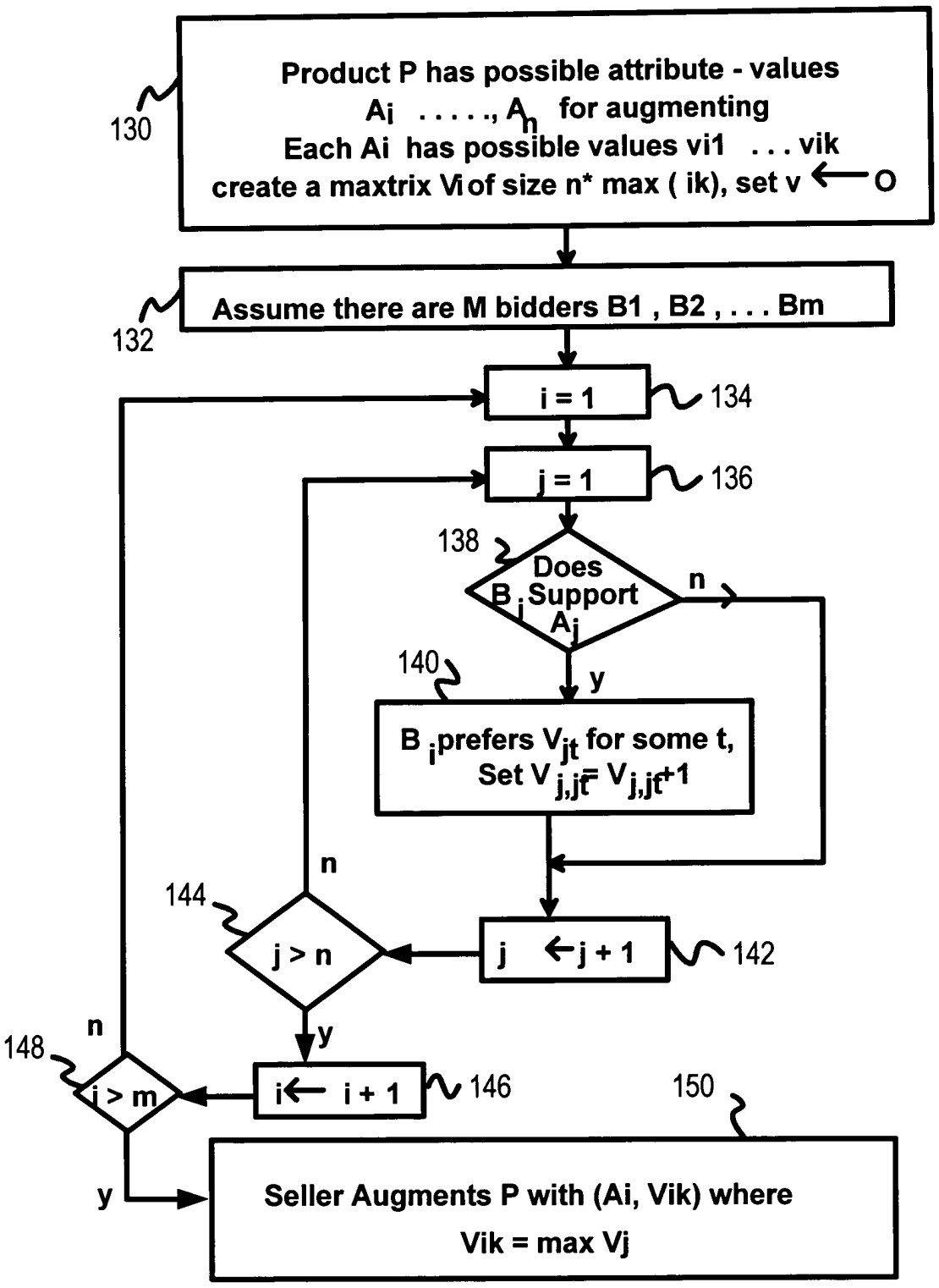

Product P has possible attribute - values
Ai An for augmenting
Each Ai has possible values vi1 ... vik
create a maxtrix Vi of size n* max (ik), set v ← O
130
Assume there are M bidders B1 , B2 , . . . Bm
132
i = 1
134
j = 1
136
138
Does
B i Support
Aj
n
y
140
B i prefers Vjt for some t,
Set V j,jt = V j,jt+1
144
n
j > n
j ← j + 1
142
y
148
n
i > m
i ← i + 1
146
150
y
Seller Augments P with (Ai, Vik) where
Vik = max Vj

Figure 10